SERVICE MANUAL

SRT 4300

DIGITAL DIRECT-TO-HOME

TELEVISION RECEIVER

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WARNING

Alternations of the design or circuitry of this SRT 4300 should not be made.
Any design changes or additions such as, circuit modifications, auxiliary jacks, switches, grounding, active or passive circuitry etc. may alter the safety characteristics of this SRT 4300 potentially create a hazard situation for the user.

Any design alterations or additions will void the manufacture's warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.

SAFETY PRECAUTIONS

Before installing any SRT 4300 for the customer, a safety check of the entire instrument should be made.
The service technician must be sure that no protective device built in to the instrument by the manufacturer has become defective or inadvertently degraded during service.

TECHNICAL SPECIFCATIONS

1. POWER SUPPLY

   Type : SMPS

   Input voltage : 95~ 240VAC 50/60Hz

   Fuse Rating : 250V/T2A

2. TUNER

   Frequency Range : 950 ~ 2150MHz

   Input Signal Level : -65 ~ -25 dBm

   First IF Frequency : 479.5MHz

   Channel Selections : PLL Frequency Synthesizer

   Input Impedance : 75 Ohm

   Connector Type : 'F' Type Female

3. DEMODULATOR

   Type: QPSK Demodulation(DVB-S)

   Symbol Rate: 2 ~ 35MS/s

   Inner FEC: Viterbi Convolution Coding, Rate 1/2,2/3,3/4,5/6,7/8

   Outer FEC: Reed Solomon Coding (204,108) T=8

4. VIDEO DECODER

   System Decoding: MPEG 2 ISO/TEC 13818 (Transport Stream)

   Profile and Level: MPEG 2 MP@ML(4:2:2)

   Data Rate: 1 ~ 15MB/s

   Video Formats: 4:3(Normal) & 16:9(Widescreen)

   Picture Resolution: 720(H) x 576(V) x 50 Fields/sec, 560(H) x 480(V) x 50 Fields/sec

5. AUDIO DECODER

   System Decoding: MPEG 1 ISO/TEC 11172~3, Layer I & II

   Audio Mode: Mono, Dual Channel , Stereo, Joint Stereo, Mutilingual

   Sampling Frequency: 32,44.1, 48 kHz

6. RF MODULATOR

   Modulator Output: CH 21 ~ 69(Preset to CH 38)

   Video type: PAL B/G, PAL I

   Output Connector: IEC Male, IEC Female

   Tuning Method: PLL Frequency Synthesized

7. EXTERNAL CONNECTORS

   Video Output: TV & VCR Scarts

   A/V Input : AUX Scart

   Control Port : 0/12V Switching Phono Jack

   RF Output : IEC Male

   RF Input : IEC Female

8. SERIAL DATA INTERFACE

   Standard : RS232,115.2kB Max.

   Connector Type : 9 Pin D-Type Female

9. EXTERNAL MODEM INTERFACE

   Connector Type : 9Pin D-Type male

INSTRUCTIONS

SCOPE OF MANUAL

This service manual is intended to direct experienced technician in the service of this product.
It contains necessary information for the equipment described and is current as of the printing date changes that occur after the printing date are incorporated by service manual revisions.

CUSTOMER SERVICE

Product service and information are available from custom service department during normal workdays from the hours at AM 08:00 to PM 17:00.

REPLACEMENT PARTS

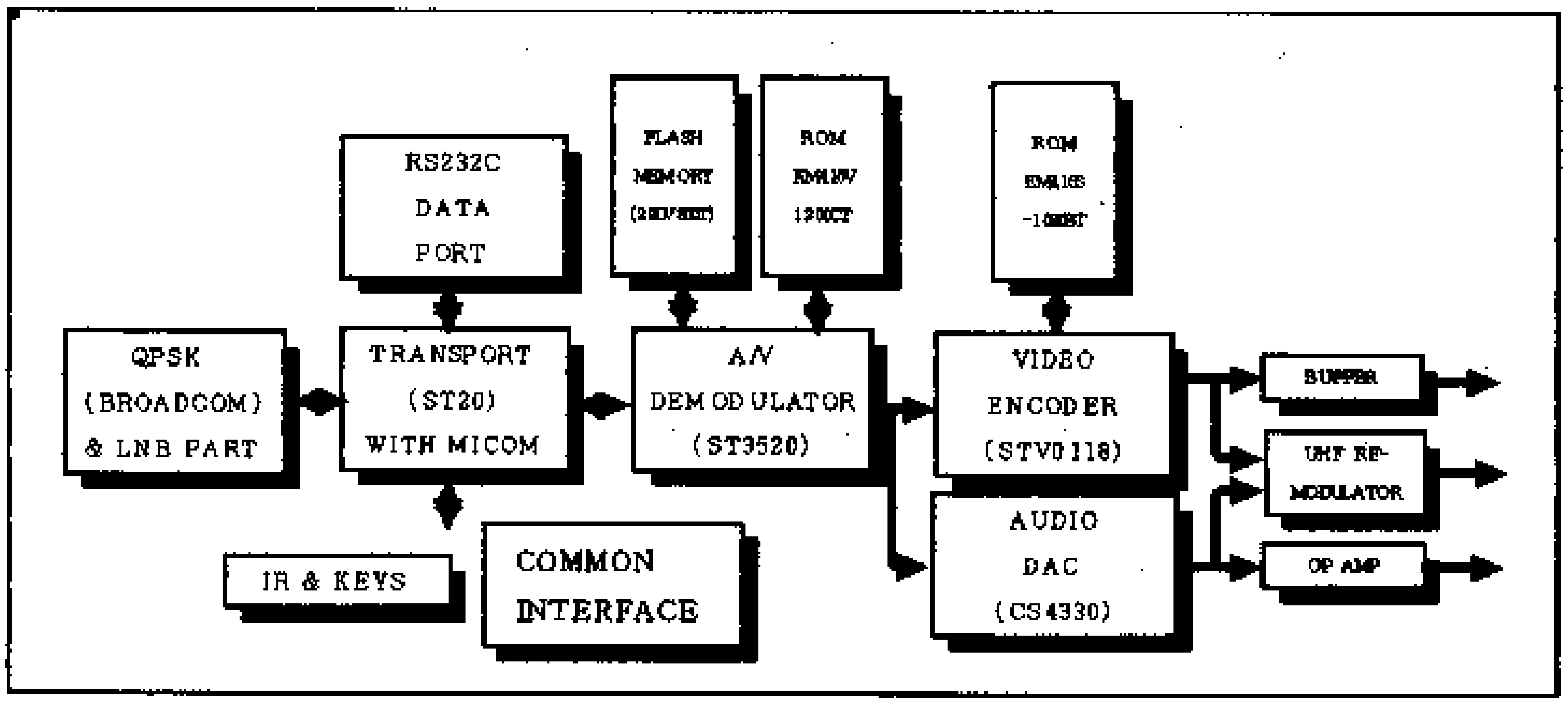
Replacement parts are available through STRONG & CO. (FAR EAST) YOKOHAMA, JAPAN
when ordering replacement parts.
Please use the complete identification number of the part shown later in this manual.
If the identification number is not known, the order should contain the part schematic symbol number, and a descriptions of the part so that the part may be properly identified.

TECHNICAL SUPPORT

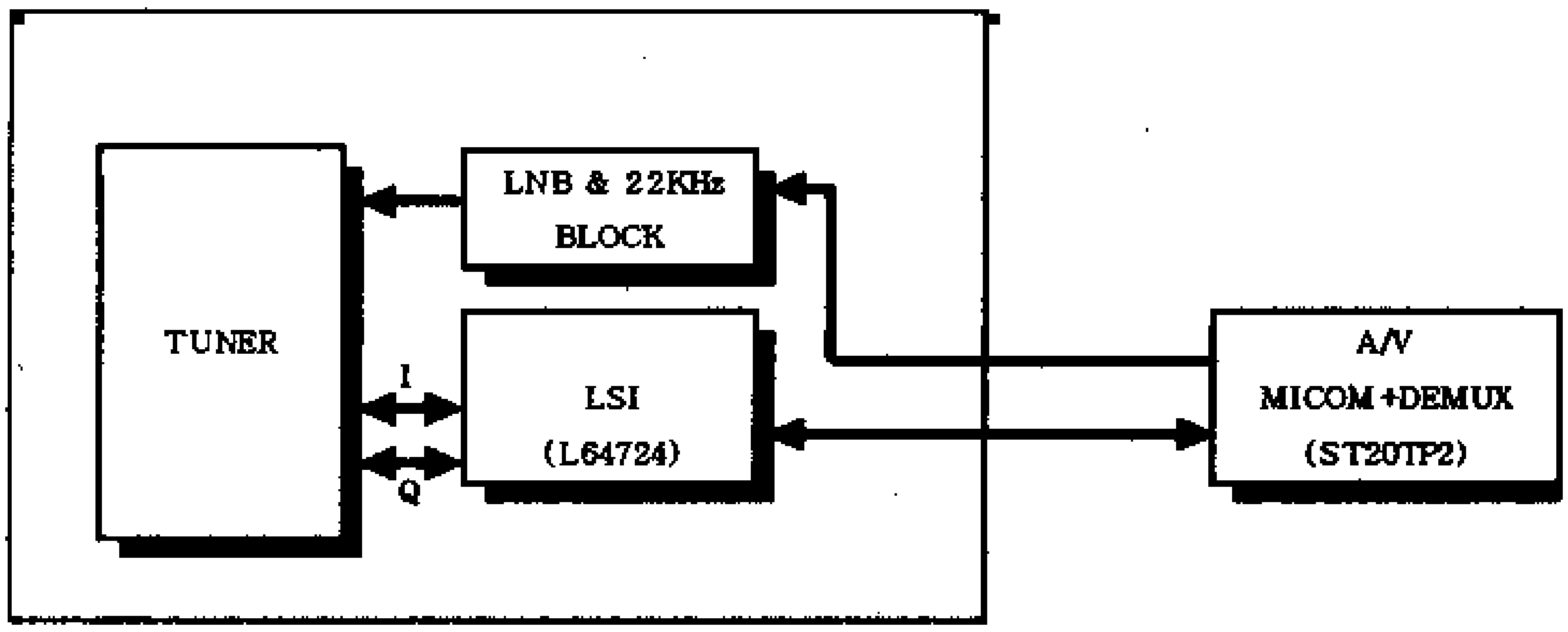
Technical trouble shooting assistance is available through service center appointed by
STRONG & CO. (FAR EAST) YOKOHAMA, JAPAN

THEORY OF OPERATION

Entire BLOCK DIAGRAM



1.QPSK MODULE



A LNB(Low Noise Block Down Converter) converts the incoming satellite signal from 12GHz down to an intermediate frequency(IF) of 1 GHz to 2 GHz. Then a PLL frequency synthesizer further down converts the signal to a second IF(479.5MHz).

The DEMUX(with microprocessor) adjusts the frequency delivered by this circuit in such a way that the IF signal falls within the bandwidth of the IF surface acoustic wave (SAW) filter. The I/Q down converter translates the IF signal to baseband.

2. DEMUX & CPU, CONTROL

A Transport Demultiplexing integrates all audio, video, and data service MPEG-2 transport layer functions, the DEMUX's principle operation is straight forward:

1. A stream of data packed in transport layer format (188 bytes per packet; see figure 2-1) enters the DEMUX IC through its channel decoder interface. The DEMUX system or IC detects the sync byte, which is the first byte of every transport packet header. Once in sync, byte, byte-aligned data is posted to the next stage of processing.
2. The DEMUX parses the incoming data using its Packet ID(PID) processor. Upon user programming the DEMUX extracts the user selected program, audio, and video Packetized Elementary Stream(PES) data, Program Specific Information(PSI), Service Information(SI), and Private Data.
3. The selected audio and video PES layer encoded data stream is output through the DEMUX.

Header	Payload	Header	Payload	Header	Payload

3. A/V DECODING

- Video Compression & Decompression Concepts

  The MPEG standards define a format for compressed digital video.

  Encoders designed to work within the confines of the standard compress video information, and decoders decompress it. The MPEG algorithms for video compression and decompression are flexible, but generally fit the following criteria:

  - Data rates are about 1 to 1.5Mbit/sec for MPEG-1 and up to 15Mbit/sec for MPEG-2. The MPEG-2 A/V Decoder used in SRT 4300 is capable of supporting data rates up to 15Mbits/sec.
  - Resolution are about 352 pixels horizontal up to about 288 lines vertical for MPEG-1 and 720 x 576 for MPEG-2(main profile). The A/V Decoder used in SRT 4300 is capable of resolution up to 720 x 576 for either MPEG-1 or MPEG-2.

3-1. Video Encoding

For a video signal to be compressed, it must be sampled, digitized, and converted to luminance and color difference signals (Y, Cr, Cb). The MPEG standard stipulates that the luminance component(Y) be sampled with respect to the color difference signal (Cr and Cb) by the ratio of 4:1. That is, for every four samples of Y, there is to be one sub-sample each of Cr and Cb, because the human eye is much more sensitive to luminance components than to color components. Video sampling takes place in both the vertical and horizontal directions. Once video is sampled, it is reformatted, if necessary, into a non-interlaced signal. An interlaced signal contains only part of the picture content(every other horizontal line, for example) for each complete display scan.

The encoder must also choose which picture type is used. A picture correspond to a single frame of motion video, or to a movie frame. There are three picture types:

- Intracoded pictures (I-pictures) are coded without reference to any other pictures.
- Predictive-coded pictures (P-pictures) are coded using motion compensated prediction from the past I or P reference pictures.
- Bidirectionally predictive-coded pictures (B-pictures) are coded using motion compensation from a previous and future I or P-pictures.

A typical coding scheme contains a mixture of I, P, and B-pictures. Typically, an I-picture may occur every half a second, to give reasonably fast random access, with two B-pictures inserted between each pair of I or B-pictures.

3-2. Video Decoding

Video decoding is the reverse of video encoding and is intended to reconstruct a moving picture sequence from a compressed, encoded bitstream. Decoding is simple then encoding because there is no motion estimation performed and there are far fewer options. The data in the stream is decoded according to the syntax defined in the MPEG-2 standard. The decoder must first identify the beginning of a coded picture and identify the type of picture, then decode each individual macroblock(a 16 x 16 region of video, corresponding to 16 horizontal pixels and 16 vertical display lines.)within a particular picture. Motion vectors and macroblock types (each of the picture types I, P, and B have their own macroblock types) present in the bitstream, are used to construct a prediction of the current macroblock based on past and future reference pictures that the encoder has already stored. Coefficient data is then inversed quantized and operated on by inverse DCT(Discrete Cosine Transform) process that changes data from the frequency domain to the time space domain. After the decoder processes all of the macroblocks the picture reconstruction is completed. If the picture just reconstructed is a reference picture(I-picture or B-picture), it replaces the oldest stored reference picture and is used as the new reference for subsequent pictures. The pictures may need to be reordered before they are displayed, in accordance with the display order instead of the coding order. After the pictures are reordered, they may be displayed on an appropriate output device.

3-3. System Overview

A/V decoding is for use in digital audio and video-decoding systems based on the MPEG-2 algorithm. It may consider as a "black box" that receives coded audio and video data and produces a decoded audio and video data stream.

4. AUDIO/VIDEO OUTPUT(BUFFERING)

Video :

After the output of the video encoder(STV0118) it is buffered to be output for the SCART and UHF modulator.

Audio :

After the output of the OPAMP it is buffered to be output for the SCART and RCA jack and UHF modulator.

5. POWER CIRCUITS

Pin Number	1 - GND	
	2 - 5V ANALOG (650mA)	: ± 0.25
	3 - GND	
	4 - 3.3V DIGITAL (800mA)	: ± 0.25
	5 - 5V DIGITAL (650mA)	: ± 0.5
	6 - GND	
	7 - 12V (200mA)	: ± 0.5
	8 - 7.5V (400mA)	: 7.0V ~ 9.0V
	9 - 28V (30mA)	: ± 1
	10 - GND	
	11 - LNB OUTPUT	

Supplies all the power for QPSK Module, output board, and the Main Board.

DIAGNOSTICS

1. Preparations
   - Personal Computer(With 486 CPU or higher)
   - RS232 Cable for communication
   - OS (Windows3.1 or higher)

2. Setup
   - Connect the 9 pin connector(RS232 Null Modem cable) of IRD(on the back panel) to the serial port of the PC or terminal(115200,N,8,1).
   - Turn on the PC
   - Select Hyper-Terminal from Windows95 or Terminal from Windows 3.1(or Higher Version)
     Select Com1 or 2 port and config the port as below,
     Speed : 115200
     Data Bit : 8
     Parity : None
     Stop Bit : 1
     Control : None
   - Turn on the IRD.

For normal operation the following messages will display on the PC screen,

```
CI DVB ver 1.30 ......
Exist  SW

Initialising Flash ...

Initialising PWM ...
anon flash.c 408> Flash init ..
EVAL-STB2 Reference Firmware
anon pwm.c 140> Clock recovery/PWM init
Version 1.2 of Dec 19 1998 at 04:56:38
                                        .
                                        .
                                        .
PAL_NTSC.... process start....

System  initialised - hit ESC to enter testtool


System  initialised - hit ESC to enter testtool
```

3. Error Messages

- Nothing on the screen(No message)

  : PC to UUT communication error -> Check HyperTerminal configurations the speed should be 115200.

  Check the pin of MAX202(U701, on the output board)or the Microprocessor(U103)for bad soldering or replace the IC.

4. To DownLoad New S/W version

  : Connect the UUT to a PC and open HyperTerminal

  Plug In the power cord of the UUT While pressing Power Key on the front Panel.

  You should see a message as,

```
Boot Version ..
Ram Clear
```

This means the UUT is set for Programme DownLoad Mode.

The next step is to select Transfer, Send File in the HyperTerminal Menu.

Then select the binary file and choose 1k Xmodem for protocol.

And click send for DownLoad.

TROUBLE SHOOTING

1. No Power & No composite Video output

   a. Check the input AC voltage

   b. Check fuse.(Rating 250V T2A)

   c. Check the SMPS output pin voltages.(Refer to page 7 for pinouts)

   d. Check T402 connect pin 8 for 12 volts.

   e. Check U401 connector pin 11 for composite video output.

   f. Follow the composite video signal path from starting with U401 to final output the scart connector to find out where the signal has been cut off.

If there is no video at this point replace the main PCB.

2. No Audio

   a. Check pin 5 and 8 of connector U302 for audio signal with an oscilloscope.

   b. Check pin 15 of connector U110

   c. Check IC U301 pin 1 for left audio output and pin 7 for right audio output.

   e. Keep checking the signal path referring to the schematic diagram and find the defective component to replace.

This pin must be 'high' (3~3.3V)for normal audio performance.
This pin is 'low' when audio is muted.

3. No RF output

   a. Check the DC level of I2C(CLK,DATA) line of the RF modulator input with an oscilloscope ,this point always be high(4.4 ~ 5V).

   b. Check the tuning voltage of the modulator pin 1 of connector MOD401 this voltage should be 28 ± 1V.

   c. Check pin 4.6 of MOD401 (RF Modulator) this pin should be always 5V

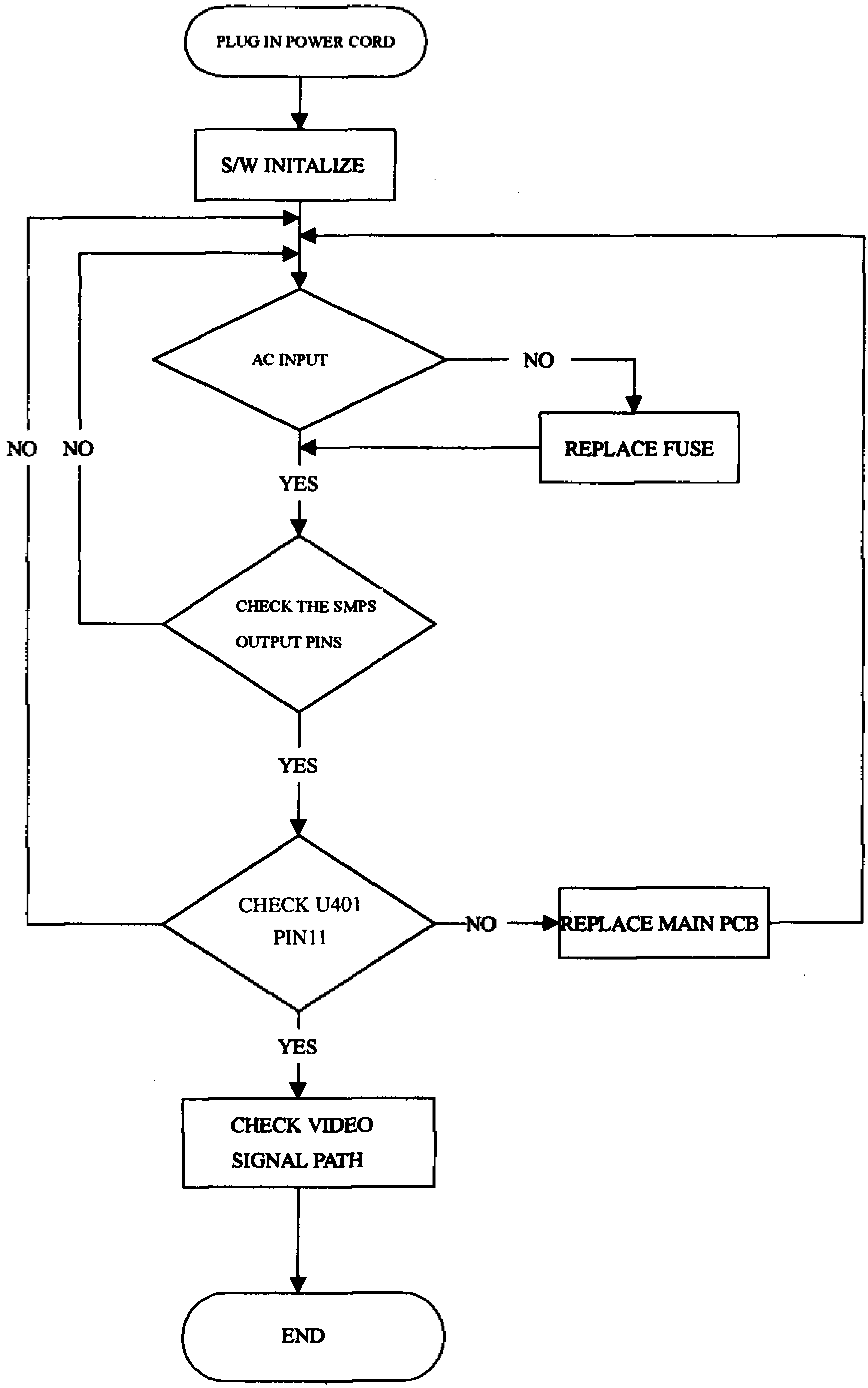
   d. Make sure the audio and video signals are going to the RF modulator input

   e. The pins should be 2 for video and 3 for audio(the pin of MOD401 RF modulator).

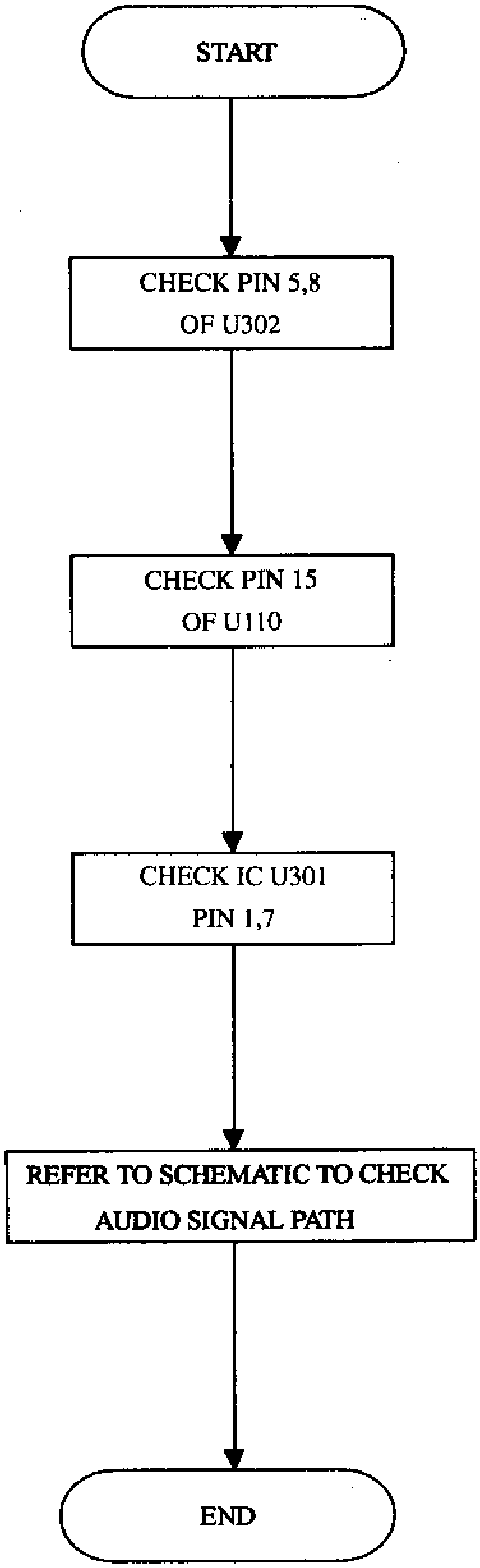
Pin 7 & 8 of connector MOD401

FLOW CHARTS

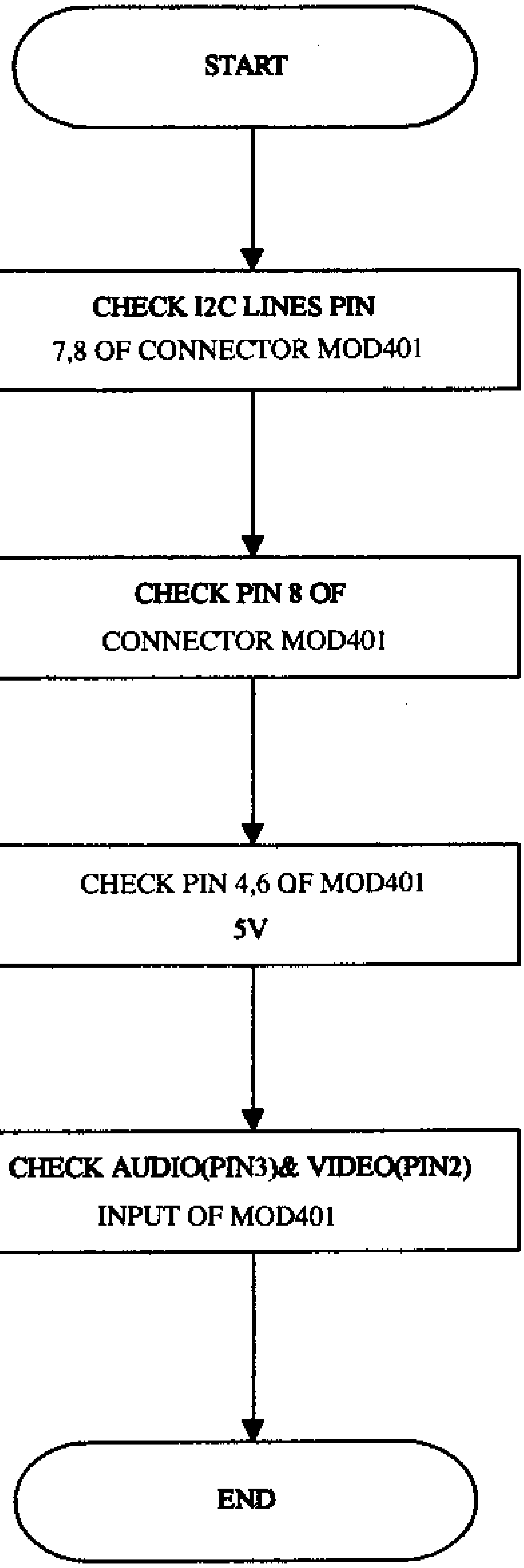
No Power & No composite Video output



NO AUDIO


START
CHECK PIN 5,8
OF U302
CHECK PIN 15
OF U110
CHECK IC U301
PIN 1,7
REFER TO SCHEMATIC TO CHECK
AUDIO SIGNAL PATH
END

NO RF OUTPUT


START
CHECK I2C LINES PIN
7,8 OF CONNECTOR MOD401
CHECK PIN 8 OF
CONNECTOR MOD401
CHECK PIN 4,6 OF MOD401
5V
CHECK AUDIO(PIN3)& VIDEO(PIN2)
INPUT OF MOD401
END

PART LIST

NO.	BOM CODE	LOCATION NO.	DESCRIPTION	원수
	MF95-10001U	MAIN PCB ASS'Y		
	MF41-00061J	MAIN PCB		1
	3711-000754	J902	CONNECTOR-HEADER;20P	1
	3709-001099	CON501	PCMCIA CONNECTOR: 68PIN,	1
	3701-000320	DB1	CONNECTOR DB;9P,2R, FEMALE,ANGLE,AUF	1
	3701-000245	DB2	CONNECTOR DB;9P,2R, MALE,ANGLE	1
	3711-001415	J101	CONNECTOR-HEADER; NOWALL,2P,1R,2.54㎜, STRAIGHT,A	1
	3711-003689	J201	CONNECTOR ; 1WALL,3P,2.54	1
	MF37-00014A	J401	CONNECTOR; 1WALL,7P,2.54	1
	3711-002687	J103	CONNECTOR-HEADER;1 WALL,10P,1R,2.5㎜, STRAIGHT,SN	1
	3711-000661	J901	CONNECTOR-HEADER;1 WALL,12P,1R,2.5㎜, STRAIGHT,SN	1
	MF59-00183Z	MOD401	RF MODULATOR; RMUP74055FL,8P	1
	3722-001210	T401 (SCART 옆)	JACK-RCA:2P/2C,3.5㎜, NI,BLK,NO	1
	3722-001230	T402	JACK-SCART;SCART,-,S N,BLK,NO	1
	2801-003365	X101	CRYSTAL-UNIT;27MHz,50 ppm,28-AAM,17pF,35oh m,	1

NO.	BOM CODE	LOCATION NO.	DESCRIPTION	원수
	MF95-18001T	MAIN IC-M ASS'Y		
	2203-000811	C102,C434,C101,	C-CERAMIC,CHIP:33pF,5%,50V,NPO,TP,2012,-	3
	2203-002016	C302,C309	C-CERAMIC,CHIP:390pF,5%,50V,X7R,TP,2012,-	2
	2203-000635	C108	C-CERAMIC,CHIP;22pF,5%,50V,NPO,TP,2012,-	1
	2203-000295	C107	C-CERAMIC,CHIP;10pF,5%,50V,NPO,TP,2012,-	1
	2203-000618	C103	C-CERAMIC,CHIP;22nF,10%,50V,X7R,TP,2012,-	1
	2203-000852	C130	C-CERAMIC,CHIP;39pF	1
	2203-000590	C407,C417,C422,C427	C-CERAMIC,CHIP;220pF,5%,50V,NPO,TP,2012,-	4
	2203-000267	C430,C412	C-CERAMIC,CHIP:10nF,20%,50V,X7R,TP,2012,-	2
	2203-000444	C950,C411,C432	C-CERAMIC,CHIP:1nF,10%,50V,X7R,TP,2012,-	3
	2203-000206	C105,C106,C112,C113,C114 C115,C116,C117,C118,C119 C120,C121,C122,C123,C124 C125,C126,C127,C128,C181 C182,C183,C184,C203,C204 C205,C206,C208,C209,C301 C305,C401,C403,C405,C406 C408,C409,C410,C415,C416 C418,C419,C423,C426,C428 C450,C501,C502,C503,C504 C506,C507,C508,C509,C510 C701,C702,C703,C704,C705 C706,C707,C708,C709,C710 C711,C712,C910,BC01,BC02, BC03,BC04,C185	C-CERAMIC,CHIP;100nF,10%,50V,X7R,TP,2012,	73

NO.	BOM CODE	LOCATION NO.	DESCRIPTION	원수
	2007-000218	R403,R405,R435,R466,R485 R496	R-CHIP;1.2Kohm,1%,1/10W,DA,TP,2012	6
	2007-000029	R141,R160,R180,R494,R905 R923,R925,R926,R928,L401 R511,R140,R201,R202	R-CHIP;0ohm,5%,1/10W,DA,TP,2012	14
	2007-000766	R431,R446,R463,R483	R-CHIP;330ohm,5%,1/10W,DA,TP,2012	4
	2007-000290	R410,R437,R454,R470	R-CHIP;100ohm,5%,1/10W,DA,TP,2012	4
	2007-000457	R411,R413,R429,R445,R462 R482	R-CHIP;18Kohm,5%,1/10W,DA,TP,2012	6
	2007-000586	R303,R309,R421,R475,R476 R490	R-CHIP;22Kohm,5%,1/10W,DA,TP,2012	6
	2007-000401	R422	R-CHIP;150ohm,5%,1/10W,DA,TP,2012	1
	2007-000026	R423,R424	R-CHIP;200ohm,5%,1/10W,DA,TP,2012	2
	2007-000300	R101,R102,R103,R104,R110 R111,R113,R114,R115,R116 R117,R118,R119,R120,R121 R122,R123,R128,R129,R130 R131,R132,R133,R134,R135 R136,R137,R142,R143,R145 R146,R147,R148, R203,R204,R301,R305,R310 R316,R412,R453,R468,R473 R493,R501,R502,R503,R504 R505,R506,R507,R512,R903	R-CHIP;10Kohm,5%,1/10W,DA,TP,2012	53
	2007-001716	R125,R126,R127,R138,R139 R306,R311,R401,R402,R414 R419,R432,R438,R440,R447 R450,R451,R455,R459,R464 R478,R479,R484,R152	R-CHIP;4.7Kohm,5%,1/10W,DA,TP,2012	24
	2007-000361	R415,R439,R456,R477	R-CHIP;12ohm,5%,1/10W,DA,TP,2012	4

NO.	BOM CODE	LOCATION NO.	DESCRIPTION	원수
	2007-001071	R425,R426	R-CHIP:6.8Kohm,5%,1/10W,DA,TP,2012	2
	2007-000572	R207,R428,R443,R460,R481	R-CHIP;220ohm,5%,1/10W,DA,TP,2012	5
	2007-001166	R420,R430,R444,R461,R471 R472	R-CHIP;75ohm,5%,1/10W,DA,TP,2012	6
	2007-000447	R433	R-CHIP;180ohm,1%,1/10W,DA,TP,2012	1
	2007-000931	R434,R448,R465,R474,R480	R-CHIP;470ohm,5%,1/10W,DA,TP,2012	5
	2007-000565	R441,R442,R449	R-CHIP;220Kohm,5%,1/10W,DA,TP,2012	3
	2007-000530	R452	R-CHIP;200Kohm,1%,1/10W,DA,TP,2012	1
	2007-001710	R457,R458	R-CHIP;15Kohm,5%,1/10W,DA,TP,2012	2
	2007-000468	R109,R205,R206,R302,R315 R469	R-CHIP;1Kohm,5%,1/10W,DA,TP,2012	6
	2007-000941	R304,R308,R313,R314	R-CHIP;47Kohm,5%,1/10W,DA,TP,2012	4
	2007-000710	R307,R312	R-CHIP:3.9Kohm,5%,1/10W,DA,TP,2012	2
	2007-001043	R124,R510	R-CHIP;56ohm,5%,1/10W,DA,TP,2012	2
	2007-000757	R144	R-CHIP;330Kohm,5%,1/10W,DA,TP,2012	1
	2007-000518	R149,R150,R151	R-CHIP;2.7Kohm,5%,1/10W,DA,TP,2012	3
	2007-000282	R105,R108	R-CHIP;100Kohm,5%,1/10W,DA,TP,2012	2
	2007-000498	R107	R-CHIP;2.2Mohm,5%,1/10W,DA,TP,2012	1
	2007-001118	R499	R-CHIP;680ohm,5%,1/10W,DA,TP,2012	1

NO.	BOM CODE	LOCATION NO.	DESCRIPTION	원수
	2007-000210	R404	R-CHIP;1.1Kohm,5%,1/10W,DA,TP,2012	1
	2007-000001	R106	R-CHIP;68Kohm,5%,1/10W,DA,TP,2012	1
	2007-000451	R409	R-CHIP;180ohm,1%,1/10W,DA,TP,3216	1
	2703-000229	L402,L403,L405,L406	INDUCTOR-SMD;6.8uH,20%,1.25x2x1.25mm	4
	2703-000125	L301,R495	INDUCTOR-SMD;INDUCTOR-SMD,10UH	2
	0501-000462	Q302,Q303,Q408,Q410,Q412 Q418,Q406	TR-SMALL SIGNAL;MMBT2907A,PNP,225mW,SOT-23,TP,	7
	0501-000458	Q301,Q304,Q403,Q404,Q405 Q407,Q411,Q413,Q416,Q417 Q419	TR-SMALL SIGNAL;KST2222ATF,NPN,350mW,SOT-23,TP	11
	0401-000133	D401,D402,D403,D404,D405 D406	DIODE-SWITCHING;RLS4148,100V,200mA,500mW,4nS,S	6
	0801-001045	U402,U403	IC-CMOS LOGIC;74HC4053,MUTIPLEXER,SOP,16P,30	2
	0801-000397	U101	IC-CMOS LOGIC;74HC04,INVERTER,SOP,14P,150MIL	1
	1201-000167	U301	IC-OP AMP;358,SOP,8P,150MIL,DUAL,100V/mV	1
	1006-000133	U701,U702,U703	SP232ACN	3
	1205-001330	U103	IC-TRANSMITTER;ST20TP2BX50S,QFP,208,-,PLASTIC	1
	1105-001107	U108,U109	IC-VIDEO RAM;416V1204,1M*16BIT,SOP,44P,400	2
	1005-001001	U201	IC-DECODER;STI3520A,QFP,160P,-,TR,CMOS,PL	1

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	1105-001049	U202	IC-DRAM;416S1120,512 KX16BITX2,SOP,50P,	1
	1002-001059	U302	IC-D/A CONVERTER;CS4330-KS,18BIT,SOP,8P,250MIL,	1
	1204-001272	U401	IC-ENCODER;STV0118, SOP,28P,291MIL, PLASTIC	1
	1203-001026 1203-001455	U902	IC-POSI.FIXED REG.;33269,DPAK,3P,265MIL, PLASTIC,3	1
	1107-001033	U106,U107	IC-FLASH MEMORY;29LV800,512Kx16BIT,SOP,48P,567	2
	1203-000416	U901	IC-RESET;1233,SOT-223,4P,-,PLASTIC,-,-,	1
	0801-000312	U904	IC-CMOS LOGIC;74HC14, SELECTOR/MULTIPLEX, SOP,	1
	0405-000117	VD101,VD102	DIODE-VARACTOR;1SV215,30V,10nA,USC,TP	2
	0803-000111	U102	IC-LOGIC;74F138	1
	0803-001688	U104,U105,U110	IC ; 74LS377	3
	0802-001037	U501	IC ;74LVT16245	1
	0802-001039	U502,U503,U504,U505	IC ;74LVT16244	4
	1301-001265	U506	IC-EPROM;PALCE22V10H-10JC	1
	1203-001560	U5104	IC ; LTC1472	1

NO.	BOM CODE	LOCATION NO.	DESCRIPTION	원수
	MF95-14001P	MAIN RADIAL ASS'Y		
	2401-000038	C402,C404, CP422,CP424,C951	C-AL,;470uF,20%,25V, GP,TP,8x11.5mm,-	5
	2401-000273	C104,C109,C110,C111,C201, C202,C207,CP401,CP405,CP406, CP408,CP411,CP412,CP413, CP417,CP419,CP420,CP423, CP427,CP428,CP430, CP435,CP436,CP437	C-AL,;100uF,20%,16V, -,TP	24
	2401-001287	C303,C306,C308,C310,C311 C313,CP402,CP403,CP409,CP410 CP414,CP418	C-AL,;47uF,20%,16V ,GP,TP,5*11.5	12
	2401-000408	C304,CP415,CP416,CP426,C505	C-AL,;10uF,20%,16V	5
	2401-000036	CP429,CP431	C-AL,;1000uF,20%,16V	2
	2401-000010	C902,CP404,CP407,CP421	C-AL,;220uF,20%,16V ,GP,TP,8*12	4
	0501-000317	Q401,Q414,Q421,Q423	TR-SMALL SIGNAL;KSA92 8A-Y,PNP,1W,TO-92	4
	0504-000180	Q402,Q409,Q415,Q420,Q422	TR-DIGITAL;DTC114ES, NPN,300mW,	5
	2301-000543	C307,C312	C-FILM,PEF;1.5nF,10%, 100V,TP,8x6.3	2
	3404-001064	S901	SWITCH-TACT;12V,50mA, 160gF,6.2x6.2x5	1
	MF95-16001P	MAIN AXIAL ASS'Y		
	3301-000287	BD301,BD401	CORE-FERRITE BEAD;AA, 3.5x1.0x(BC3560)	2
	ML27-00174A	L410	INDUCTOR ; 100UH,10	1
	2001-000342	R408	R-CARBON;130ohm,5%,1/ 4W,AA,TP,2.4x6.	1
	2001-000034	R416,R417	R-CARBON;220ohm,5%,1/ 4W,AA,TP,2.4x6.	2
	2001-000036	R407,R418,R427	R-CARBON;330ohm,5%,1/ 4W,AA,TP,2.4x6.	4

NO.	BOM CODE	LOCATION NO.	DESCRIPTION	원수
	MF95-40001L	FRONT PCB ASS'Y		
	MF41-00061G	FRONT PCB		1
	0703-000113	U202	DISPLAY LED ;DA4354W,7SEG	1
	MF39-00209B	J1	ASS'Y-CONN,HOUS,OTH -,CHL0640-10,10S,L150,10S	1
	MF59-00183H	T100	IR RECEIVER; TSOP1238UU1,-,-,-,-,38KHz	1
	MF95-42001B	FRONT CHIP MOUNT ASS'Y		
	2203-000206	C201,C202	C-CERAMIC,CHIP;100nF,10%, 50V,X7R,TP,2012,	2
	0401-000133	D200,D201,D202,D203,D204, D205,D206,D207	DIODE-SWITCHING;RLS4148,1 00V,200mA,500mW,4nS,S	8
	0501-000458	Q1,Q2,Q3,Q4	TR-SMALL SIGNAL;KST2222 ATF,NPN,350mW,SOT-23,TP	4
	2007-000300	R213	R-CHIP;10Kohm,5%,1/10W,D A,TP,2012	1
	2007-000468	R214,R215,R216,R217	R-CHIP;1Kohm,5%,1/10W,DA, TP,2012	4
	2007-000290	R218,R219,R220,R221,R222 R223,R224,R225	R-CHIP;100ohm,5%,1/10W,D A,TP,2012	8
	0801-000679	U201,U203	IC ; 74HC595,SOP,RESISTOR	2
	2007-000033	JP17,JP18,JP19,JP20,JP21 JP23,JP24,JP25	R-CHIP;0ohm,5%,1/8W,DA,T P,3216	8
	MF95-44001L	FRONT RADIAL ASS'Y		
	3404-001064	SW200,SW201,SW202,SW203 SW204,SW205,SW206,SW207	SWITCH-TACT;12V,50mA,160 gF,6.2x6.2x5mm,SPS	8
		FRONT AXIAL ASS'Y		
	3811-000545	JP5,JP8,JP22	JUMPER;DIP	3
	3811-000545	JP1,JP2,JP6,JP7,JP9 JP11,JP12,JP13,JP27	JUMPER;DIP	9
	3811-000545	JP3,JP4,JP10,JP14,JP16 JP26	JUMPER;DIP	6

NO.	BOM CODE	LOCATION NO.	DESCRIPTION	원수
	MF95-20001J	CH PCB ASS'Y		
	MF41-00061M	CH PCB	양면	1
	MF40-00115R	J1	TUNER-DBS;TBDU38321IA,900-2150,PAL,-	1
	1206-000152	U7	IC-TIMER;KA555,DIP,8P,300MIL,PLASTIC,	1
	1203-000157	U6	IC-POSI.ADJUST REG.;317,TO-220,3P,-,PLASTIC,1.2V/3	1
	1203-000273	U1	IC-POSI.FIXED REG.;7805,TO-220,3P,-,PLASTIC,4.8/5	1
	MF37-00012A	J4	CONN;LWL0640-11,SR,-,2.54,WHITE,-,-	1
	2801-000165	Y1	CRYSTAL-UNIT;15MHz,50ppm,28-AAM,16pF,25ohm,	1
	MF62-00014B	CHANNEL U6	HEAT-SINK	1
	6002-000441	CHANNEL U6	BH,+,1,M3,L6,ZPC(BLK),SWRCH18A	1
	MF39-00230N	J5	12P WIRE ;80MM	1
	3711-000754	J3	20P CONN	1
	MF95-28001J	CH CHIP ASS'Y		
	2203-000206	C1,C2,C3,C7,C10,C11 C12,C13,C14,C15 C19,C20,C25,C26,C27 C28,C29,C30,C31,C35	C-CERAMIC,CHIP;100nF,10%,50V,X7R,TP,2012,	20
	2203-002278	C36,C38	C-CERAMIC,CHIP;100pF,5%,50V,NPO,TP,2012,-	2
	2203-000609	C9	C-CERAMIC,CHIP;22nF,10%,50V,X7R,TP,2012,-	1
	2203-000267	C37	C-CERAMIC,CHIP:10nF,20%,50V,X7R,TP,2012,-	1
	2203-000429	C32,C33,C39	C-CERAMIC,CHIP;18pF,5%,50V,NPO,TP,2012,-	3
	2203-000635	C16	C-CERAMIC,CHIP;22pF,5%,50V,NPO,TP,2012,-	1

NO.	BOM CODE	LOCATION NO.	DESCRIPTION	수량
	2203-000483	C17,C18,C21	C-CERAMIC,CHIP:1UF,+80-20%,25V,Y5V,TP,3216,-	3
	2404-000201	C5,C6	C-TA,CHIP;22UF,20%,6.3V,TP,6032	2
	2404-000235	C4,C8,C22	C-TA,CHIP;4.7UF,20%,16V,TP,3528	3
	2703-000125	L1	INDUCTOR-SMD;INDUCTOR-SMD,10UH	1
	2007-000308	R9	R-CHIP;10ohm,5%,1/10W,DA,TP,2012	1
	2007-000395	R27	R-CHIP;150Kohm,5%,1/10W,DA,TP,2012	1
	2007-000457	R24	R-CHIP;18Kohm,5%,1/10W,DA,TP,2012	1
	2007-000468	R11,R13	R-CHIP;1Kohm,5%,1/10W,DA,TP,2012	2
	2007-000477	R12	R-CHIP;1Mohm,5%,1/10W,DA,TP,2012	1
	2007-000518	R3	R-CHIP;2.7Kohm,5%,1/10W,DA,TP,2012	1
	2007-000572	R5,R6,R7	R-CHIP;220ohm,5%,1/10W,DA,TP,2012	3
	2007-000026	R26	R-CHIP;200ohm,5%,1/10W,DA,TP,2012	1
	2007-000586	R19	R-CHIP;22Kohm,1%,1/10W,DA,TP,2012	1
	2007-000931	R2,R23	R-CHIP;470ohm,5%,1/10W,DA,TP,2012	2
	2007-000766	R17	R-CHIP;330ohm,5%,1/10W,DA,2012	1
	2007-000300	R15,R16,R20,R21 R28,R30,R14	10Kohm,5%,1/10W,AA,TP,2012	7
	2007-000774	R25	33Kohm,5%,1/10W,AA,TP,2012	1
	2007-000830	R8	39Kohm,5%,1/10,AA,TP,2012	1

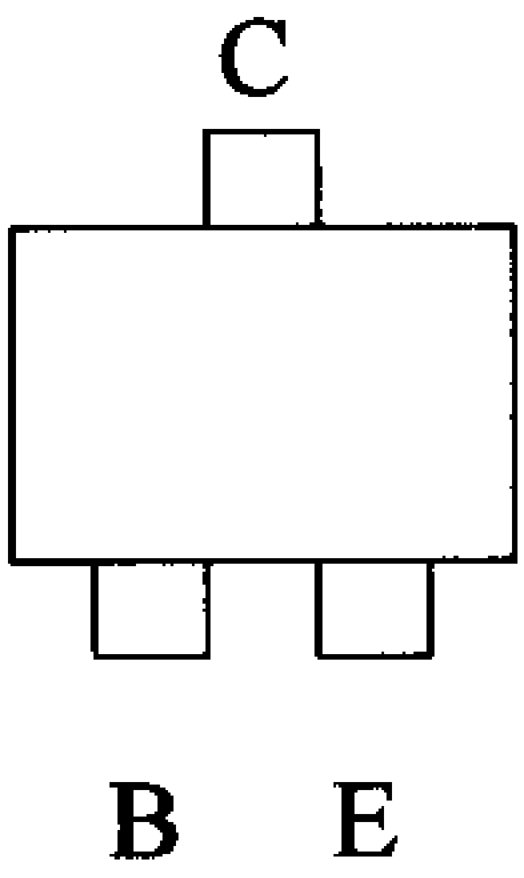
NO.	BOM CODE	LOCATION NO.	DESCRIPTION	원수
	2007-001716	R4,R10	R-CHIP;4.7Kohm,5%,1/10W,DA,TP,2012	2
	2007-000981	R18	5.6Kohm,5%,1/10W,AA,TP,2012	1
	0501-000458	Q11	TR-SMALL SIGNAL;KST2222ATF,NPN,350mW,SOT-23,TP	1
	0501-000462	Q1	TR-SMALL SIGNAL;MMBT2907A,PNP,225mW,SOT-23,TP,	1
	0801-002384	U5	IC-ANALOG SWITCH:HC4066BD,BILATERAL CMOS,SOP,14	1
	1204-001391	U4	IC-DECODER ; L64724,QFP,100P	1
	1203-001026 1203-001455	U2,U3	IC-POSI.FIXED REG.:33269,DPAK,3P,265MIL,PLASTIC,3	2
		<u>CH RADIAL ASS'Y</u>		
	2401-000050	C34	C-AL,:10uF,20%,16V,GP,TP	1
	0501-000317	Q3,Q6,Q9	TR-SMALL SIGNAL;KSA928A-Y,PNP,1W,TO-92L,TP,160	3
	0504-000180	Q2,Q4,Q5,Q7,Q8,Q10	TR-DIGITAL;DTC114ES,NPN,300mW,	6
		<u>CH AXIAL ASS'Y</u>		
	2001-000044	R22,R29,R31	R-CABON;1.2Kohm,5%,1/4W,AA,TP,2.4x6.4m	3
	3301-000287	BD1,BD2,BD3,BD4,BD5,BD6	CORE-FERRITE BEAD:AA,3.5x1.0x6.0mm,1500,2400G(BC3560)	6
	1404-000196	X1	THERMISTOR-PTC;0.75ohm,-,-,60V,500mA	1
	0402-000514	D1	DIODE-RECTIFIER:BYW32,200V,2A,SOD-57	1
	0402-000129	D2	DIODE : IN4003	1

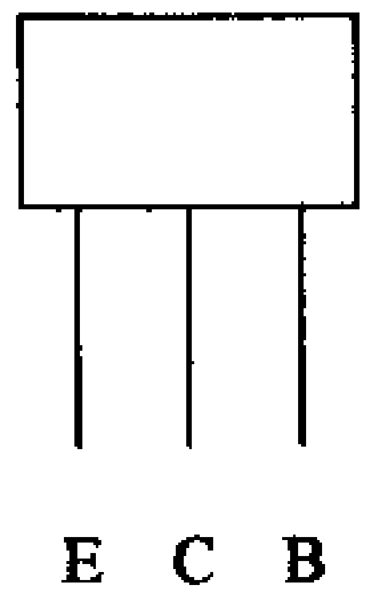
NO.	BOM CODE	LOCATION NO.	DESCRIPTION	원수
	MF95-60001C	SUB PCB ASS'Y		
	MF41-00061K		SUB PCB	1
	MF37-00033A	S1	JR-21A7SC,DR,21,2.54, BLACK	1
	3722-000475	J1	JACK-DC POWER	1
	MD39-00007A	J2	7P, 80mm,	1
	MF95-64001B	SUB RADIAL ASS'Y		
	0501-000317	Q2	TR-SMALL SIGNAL;KSA928A-Y,PNP,1W,TO-92L,TP,160	1
	0504-000180	Q1	TR-DIGITAL;DTC114ES,NPN,300mW,	1
		SUB AXIAL ASS'Y		
	2001-000044	R2	R-CABON;1.2Kohm,5%,1/4W,AA,TP,2.4x6.4m	1
	0401-000005	D1,D2	DIODE ; 1N4148,DIP	2

NO.	BOM CODE	LOCATION NO.	DESCRIPTION	VENDOR	회수
PACKING					
	4301-000115 4301-001005	BATTERY-ALKALINE BATTERY-ZN	1.5V,AAA, 1.5V,AAA,10.5*44.5	서룡	2 2
	MD68-00103A	bar -cord		삼광	3
	MF39-00229J	CABLE-PAL	3C2V,-,-,L1500,-,1S,-,BLK,-,-,	ksetc	1
	MF59-00185Y	REMOCON	SRT4300	삼진	1
		MANUAL		삼성	1
	MF39-00230D	RCA CABLE			1
	MF69-00234Z	PACKING-BUFFER(L)	EPS,292x103x103,DSR-2000,-,-,-	DHSGI	1
	MF69-00235A	PACKING BUFFER(R)	EPS,292x103x103,DSR-2000,-	DHSGI	1
	MF69-00239M	PACKING-GIFT BOX: SRT4300		대동칼 라인쇄	1
	MF69-00240G	PACKING CB BOX		삼성산 업사	0.25

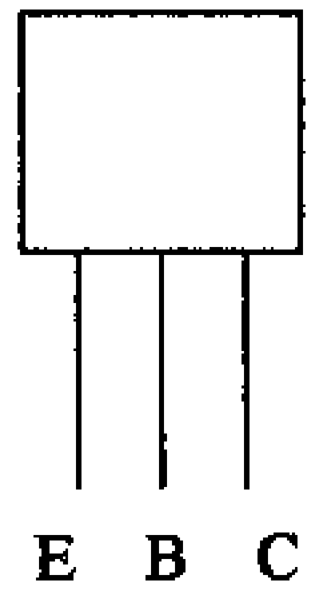
NO.	BOM CODE	LOCATION NO.	DESCRIPTION	VENDOR	원수
완 성					
	MF39-00100A	POWER CORD	-,-,2S,L1830,-,-,-,-,-,-,-,-,-	국제 통신	1
	6021-001002	TUNER	NUT-HEXAGON;2C,M3/8-32UF	금강	2
	6031-000524	TUNER	WASHER-PLAIN;UNF,ID9.8	금강	2
	6103-000127	SMPS 트랜스 밑면	SUPPORTER,L6.5,BLK	유일	1
	6502-001013	CABLE CLAMP	DACH-1,ID10,T6.8,NYLON66, BLK	동아	1
	MF72-00158A	INSULATOR	PC	유일	1
	6002-000440	GOLD FOOT에 사용	RWH,+,2,M3,L8,ZPC(BLK), SWRCH18	삼풍	2
	6002-000440	black FOOT에 사용	RWH,+,2,M3,L8,ZPC(BLK), SWRCH18	삼풍	2
	MF70-00137H	CHASSIS	T1.0,358.8x240x59.2,DSR-2	신흥	1
	MF62-00014C	HEAT SINK	64724 (QPSK IC) 부착용		1
	MF70-00136A	COVER	SECCT0.6,366.8x240.8x61.9, DSR-	신흥	1
	MF70-00137D	REAR	SECC T0.6,360.2x58.4x11.9, DSR-	신흥	1
	MF39-00104E	FLAT CABLE	20P	KSETC	1
	MF44-00001G	SMPS	220V,1.3A,50-60HZ,FET,197x198x	INSUNG	1
	MF72-00156S	HOUSING FRONT ASS'Y			1
	6002-000564	4*8	BH,+,2,M4,L8,BLK,SWRCH18A	SPSNIS	5
	6002-000441	3*6	BH,+,1,M3,L6,ZPC(BLK),SWRCH18A	SPSNIS	19
	6104-000118	FOOT	USR1500,T10.5,BLK,NEOPRENE,-	유일	2
	6104-000119	FOOT	USR1500,T11.3,YEL,ABS+EVA,-	유일	2

TRANSISTOR PINOUTS





C114,A928

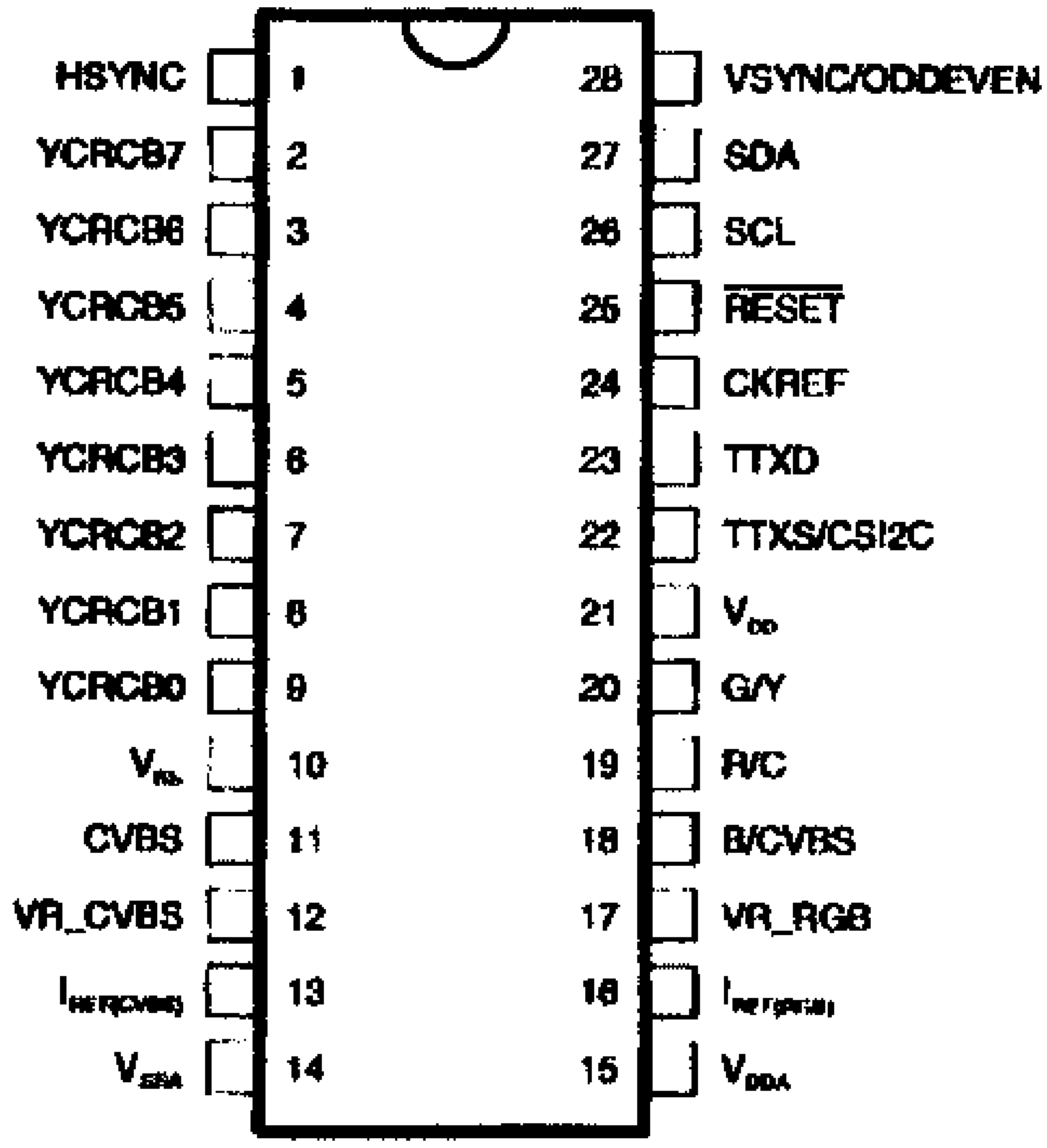


2N3906,PN2222

SMPS PINOUTS

1 – GND
2 – 5V ANALOG (650mA) : ±0.5V
3 – GND
4 – 3.3V DIGITAL (800mA) : ±0.25
5 – 5V DIGITAL (650mA) : ±0.5V
6 – GND
7 – 12V (200mA) : ±0.5V
8 – 7.5V (400mA) : 7.0V ~ 9.0V
9 – 28V (30mA) : ±0.5V
10 – GND
11 – LNB OUTPUT

IC PINOUTS



STV0118

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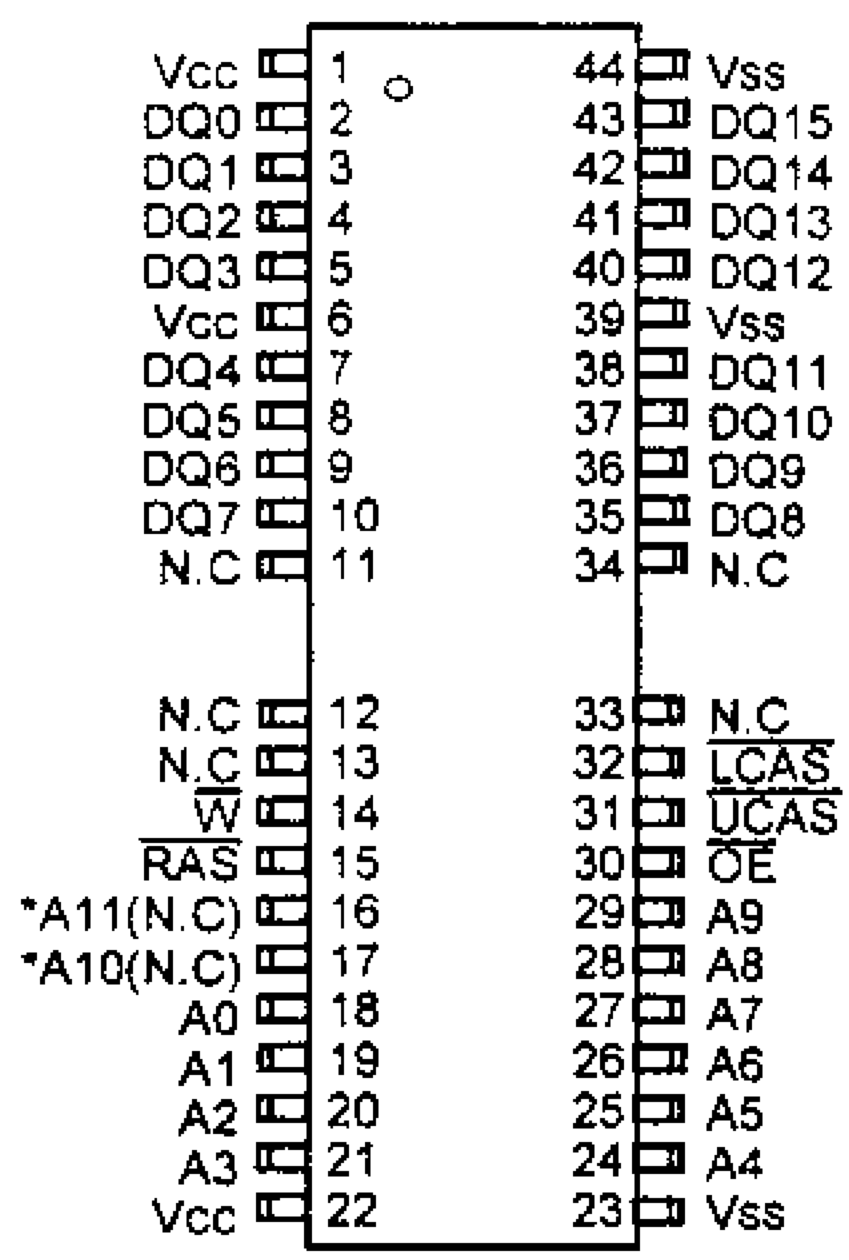

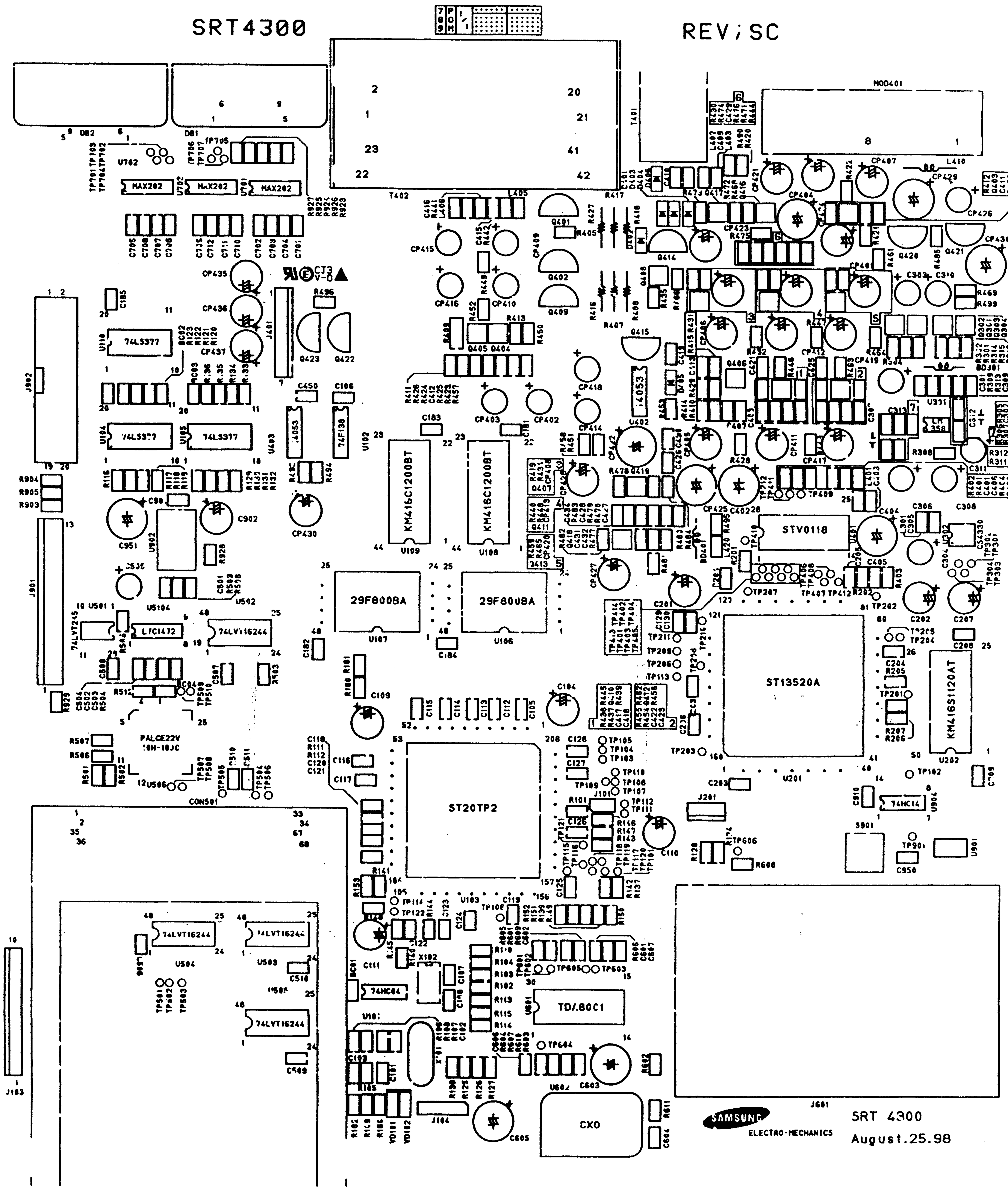

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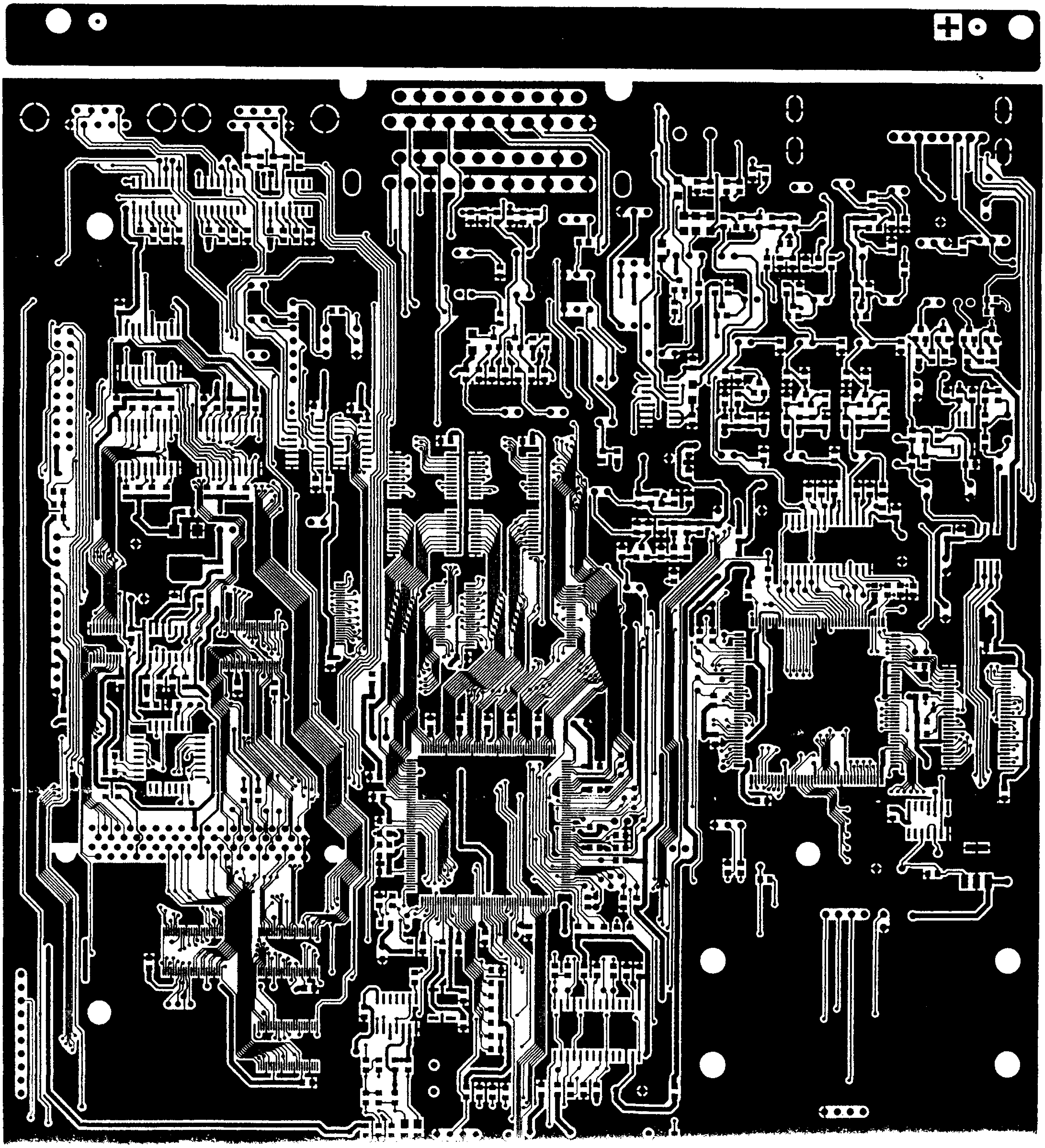
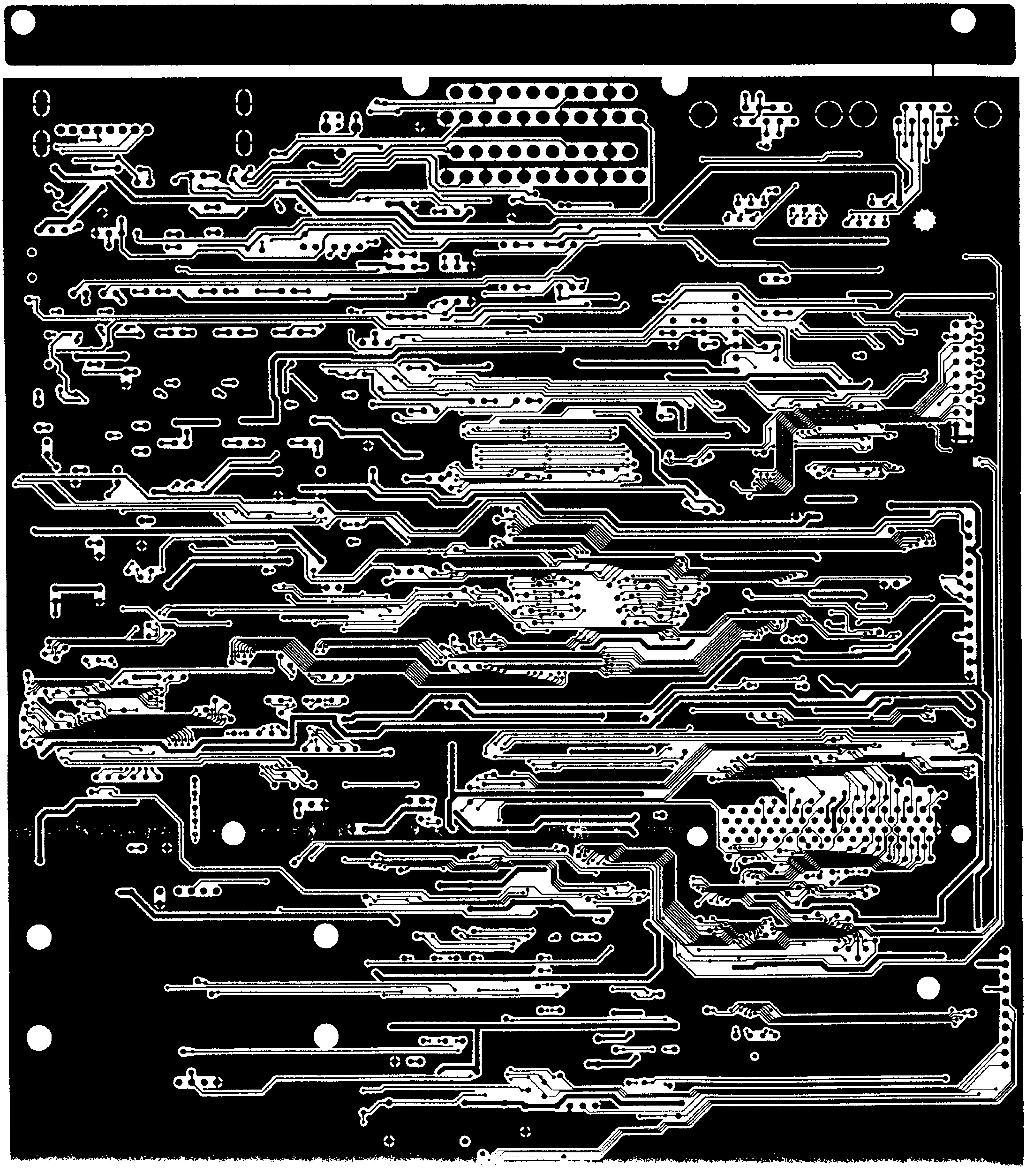
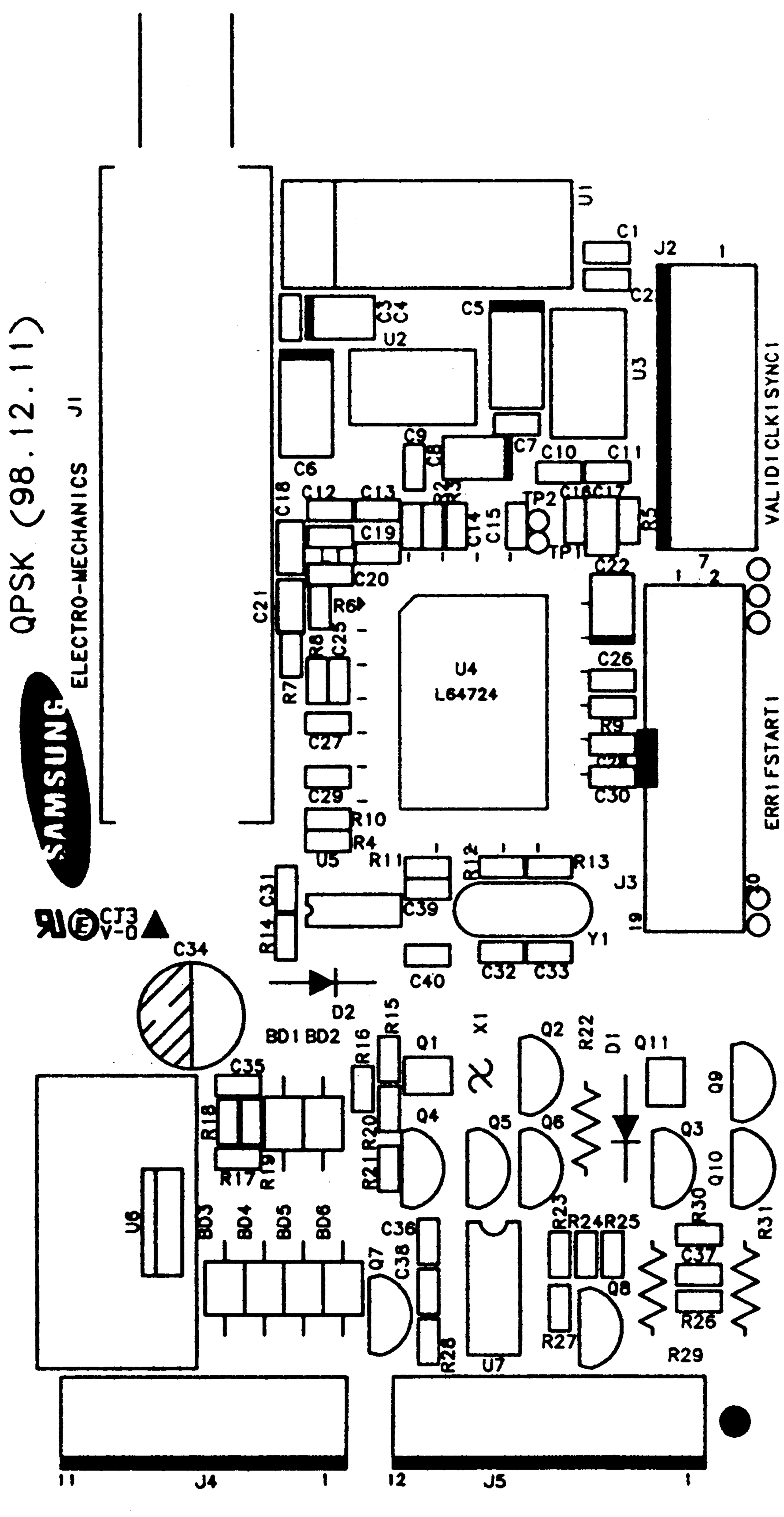
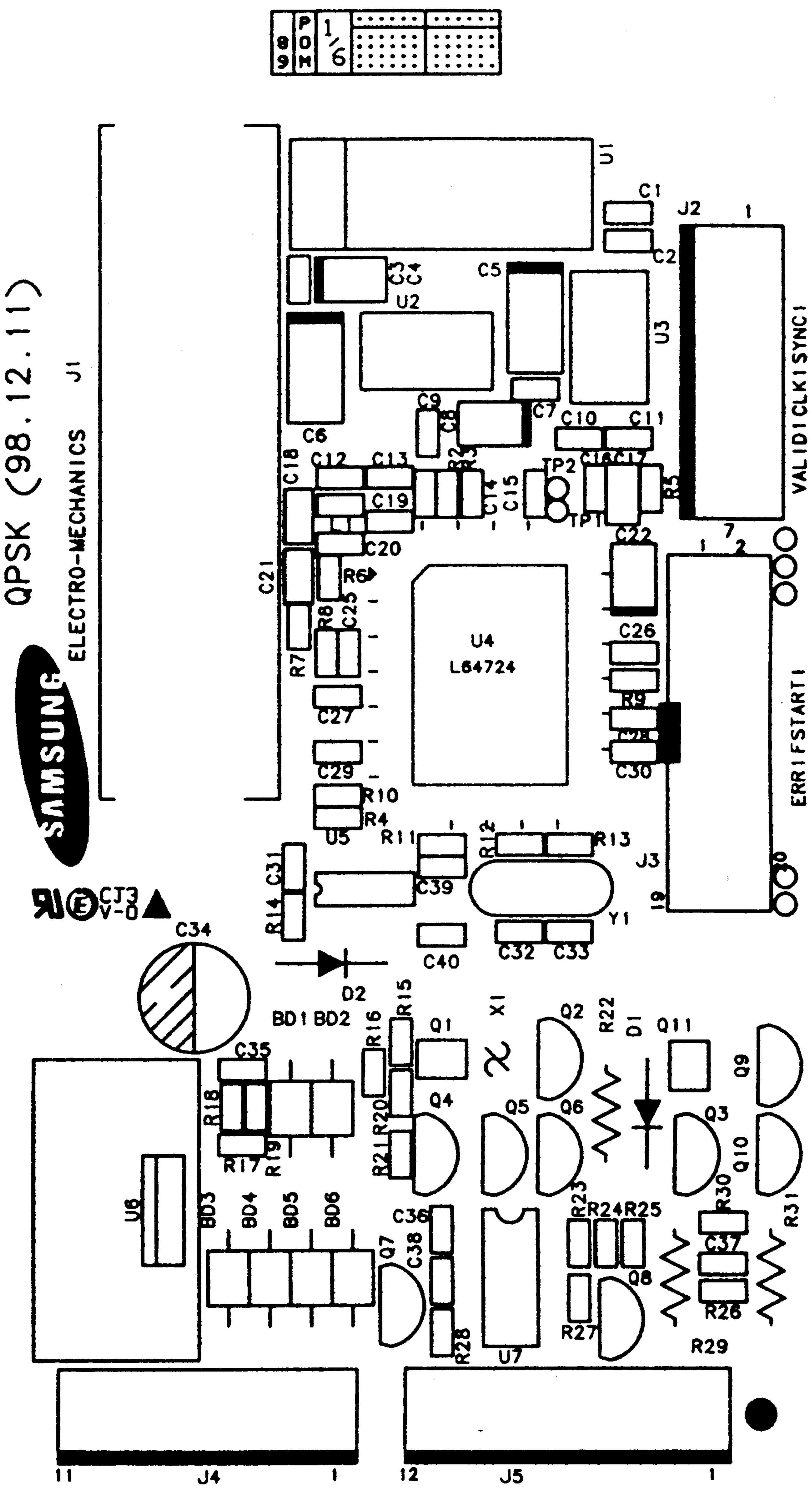


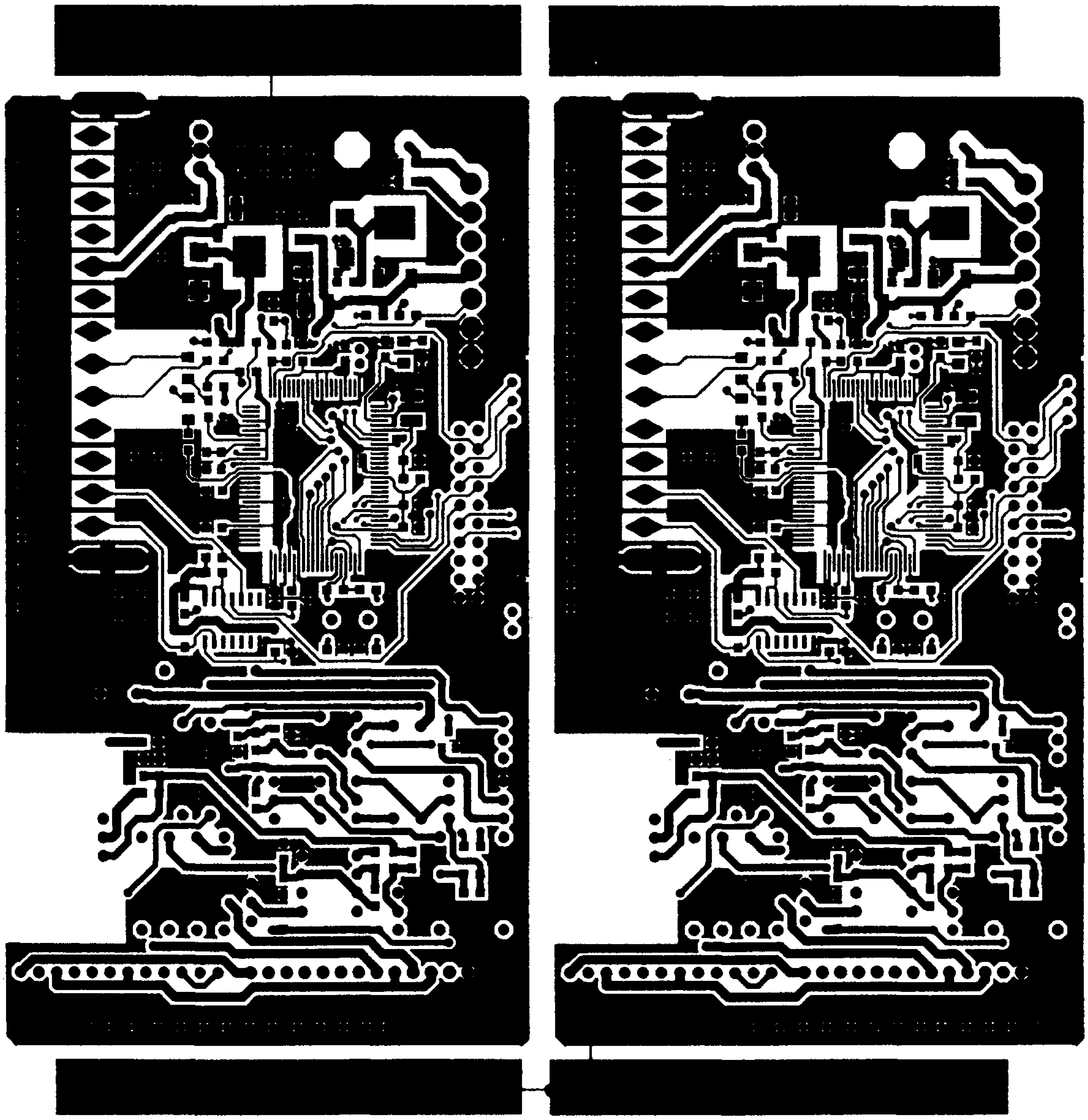






SRT 4300 QPSK REV;SF

101/SRT 4300 QPSK/D01-366-SF/COMP/ dm/98.12.14



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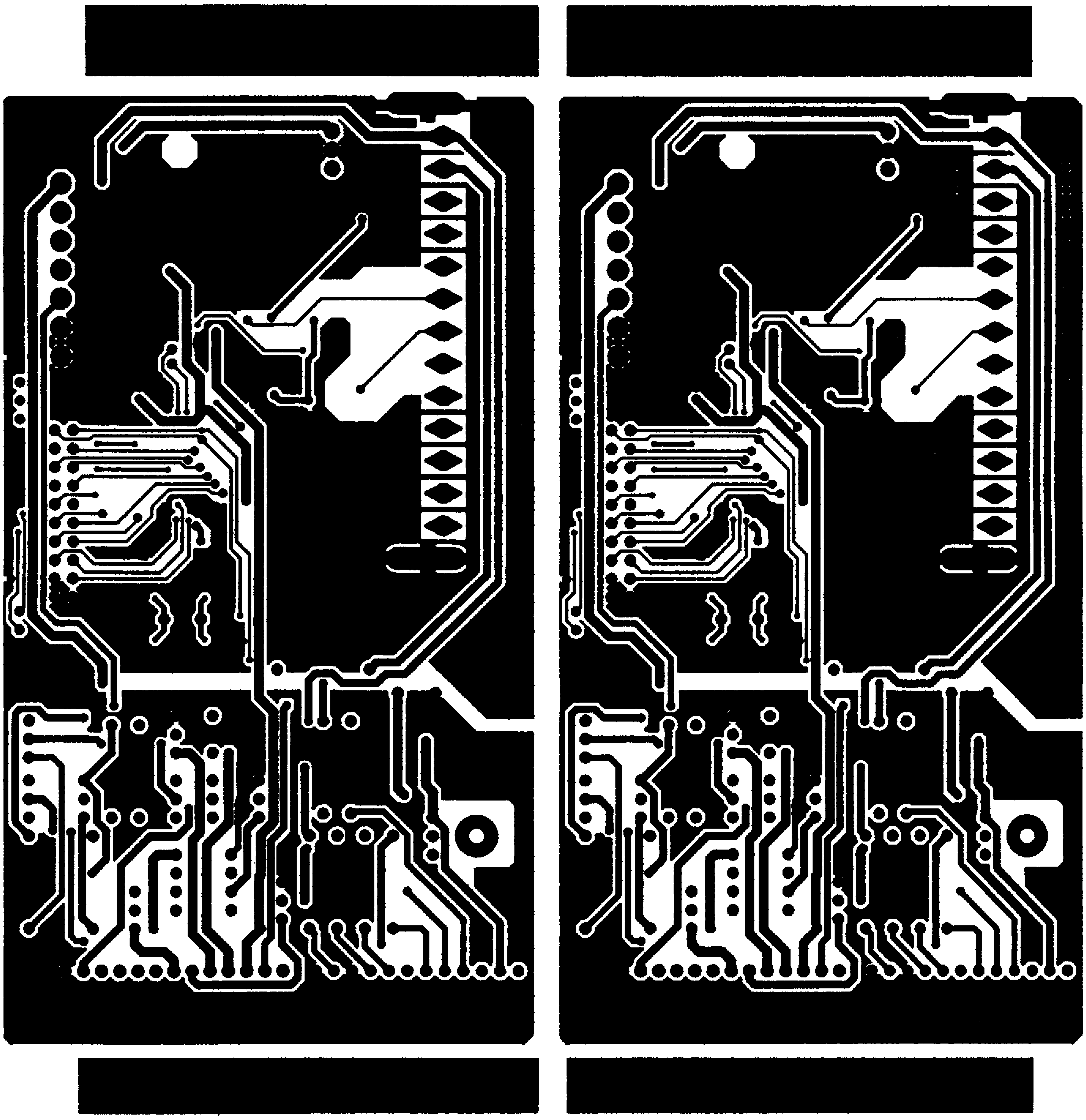

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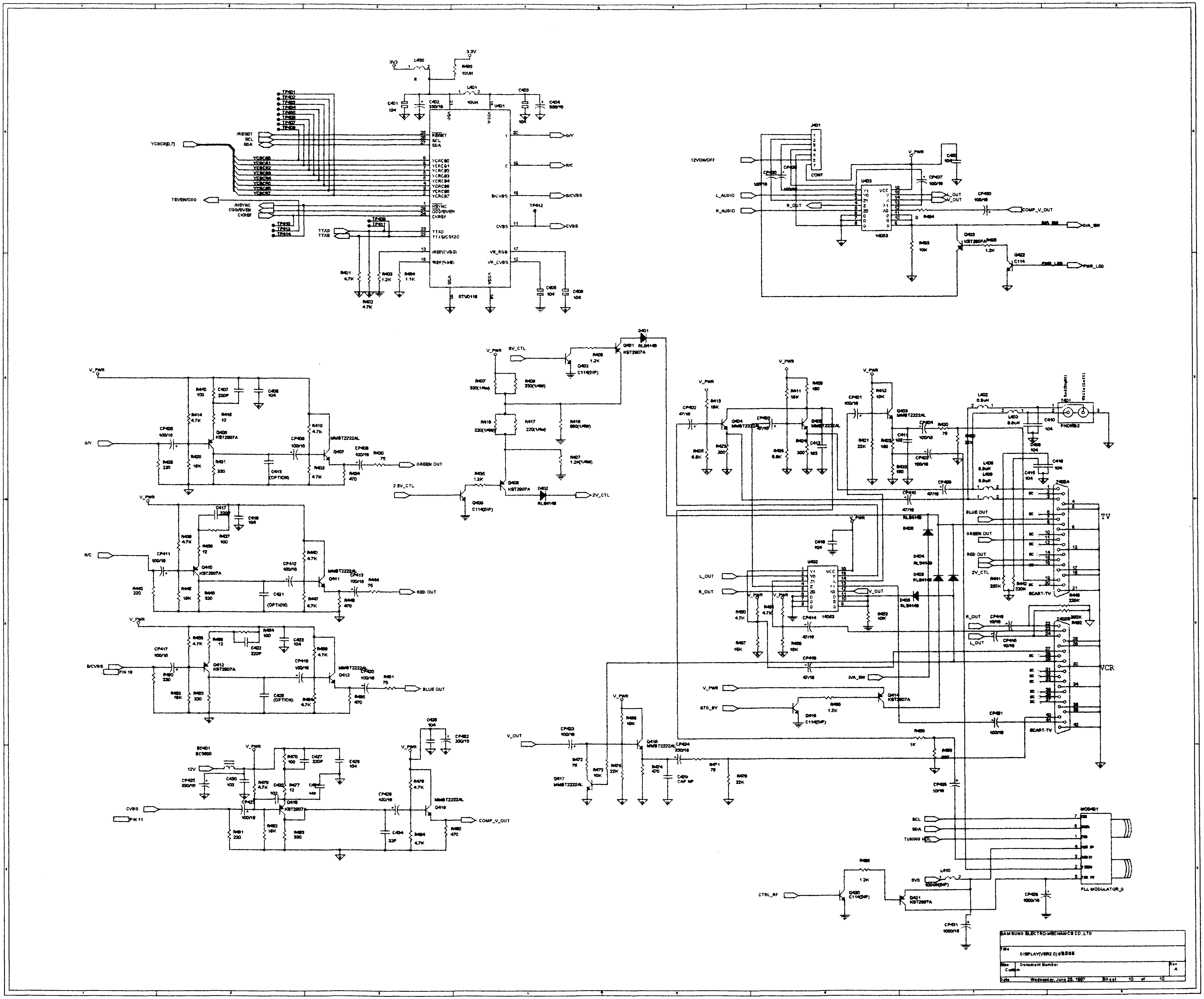
SAMSUNG ELECTRO-MECHANICS CO.,LTD
Title
Size Custom
Document Number
Rev A
Date Wednesday, June 25, 1997
Sheet 10 of 10


5VD
R213
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KEY-IN
SW200 UP
SW201 DOWN
SW202 RIGHT
SW203 LEFT
SW204 MENU
SW205 SELECT
SW206 CLEAR
SW207 POWER
D200 1N4148
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D207 1N4148
Q1 2222
Q2 2222
Q3 2222
Q4 2222
R214 1K
R215 1K
R216 1K
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QA QB QC QD QE QF QG QH QH^
SER SRCLK SRCLR RCLK G
74HC595
C202 104
J1
KEY-IN
POWER
RCU_D
5VD
CON10
U202
LTC-5643G(5623G)
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R219 100
R220 100
R221 100
R222 100
R223 100
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74HC595
C201 104
T200
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Size A4
Document Number
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Rev 0
Date: Tuesday, July 22, 1997
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